CLAIMS:

1. (original) A method for supplying reductant to a catalyst coupled to an internal combustion engine operating at a lean/air fuel ratio, comprising the steps of:

indicating a quantity of reductant stored within the catalyst; and

while said quantity is less than a first predetermined quantity, supply reductant to the catalyst.

2. (original) The method of claim 1, wherein said step of supplying reductant to the catalyst is performed under predetermined conditions.

3. (original) The method of claim 2, wherein an operating condition of the engine is selected to provide said predetermined conditions.

4. (original) The method of claim 2, wherein said predetermined conditions comprise a temperature of the catalyst greater than a predetermined temperature.

5. (original) The method of claim 4, wherein said predetermined temperature is approximately 300 degrees Celsius.

6. (original) The method of claim 2, wherein said predetermined conditions comprise a NOx concentration of an exhaust gas stream discharged from the engine less than a predetermined concentration.

7. (original) The method of claim 1, wherein said first predetermined quantity is an insignificant amount of reductant stored within the catalyst.

8. (original) The method of claim 1, further comprising the step that when said quantity of reductant stored within the catalyst is greater than a second predetermined quantity, substantially discontinue said supplying step.

9. (original) The method of claim 8, wherein said second predetermined quantity is based on an indication of a reductant storage capacity of the catalyst.

10. (original) The method of claim 2, wherein said predetermined conditions cause reductant to absorb onto active sites within the catalyst.

11. (original) The method of claim 10, wherein said active sites are comprised of copper oxide.

12. (original) The method of claim 10, wherein said first predetermined quantity is an insignificant amount of reductant stored on active sites within the catalyst.

13. (original) The method of claim 12, further comprising the step of discontinuing said supplying step when said quantity of reductant stored on active sites within the catalyst is greater than a second predetermined quantity.

14. (original) The method of claim 10, further comprising the step of discontinuing said supplying step when said quantity of reductant stored on active sites within the catalyst is greater than a second predetermined quantity.

15. (original) The method of claim 14, wherein said second predetermined quantity is based on an indication of a number of active sites within the catalyst.

16. (original) A system for increasing the conversion of NOx in a catalyst receiving exhaust gases from a combustion chamber operating at an air/fuel ratio lean of stoichiometric, comprising:

an injector supplying reductant to the exhaust gases, said injector is located upstream of the catalyst and downstream of the combustion chamber; and

an electronic control unit operably connected to said injector and the combustion chamber which periodically creates a first set of operating conditions of said combustion chamber and actuates said injector during said first set of operating conditions.

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17. (original) The system of claim 16, further comprising an exhaust gas sensor downstream of the catalyst.

18. (currently amended) The system of claim 176, wherein said exhaust gas sensor is operably connected to said electronic control unit and said electronic control unit bases said actuation of said injector on a signal from said exhaust gas sensor.

19. (original) The system of claim 16, wherein said first set of operating conditions comprise creating a temperature in the catalyst greater than about 300 degrees Celsius.

20. (original) The system of claim 16, wherein the combustion chamber is a combustion chamber of an internal combustion engine.

21. (original) A method for increasing NOx conversion efficiency of a catalyst coupled to an internal combustion engine, comprising the steps of:

providing an indication of a quantity of reductant stored within the catalyst;

when said quantity is less than a first predetermined quantity, creating an operating condition which provides a temperature in the catalyst exceeding a predetermined temperature.

22. (original) The method of claim 21, wherein said predetermined temperature is approximately 300 degrees Celsius.

23. (original) A method for increasing NOx conversion efficiency of a catalyst

coupled to an internal combustion engine, comprising the steps of:

providing an indication of a quantity of reductant stored within the catalyst;

when said quantity is less than a first predetermined quantity, creating an engine operating condition at which exhaust gases discharged from the engine have a concentration of NOx less than a predetermined concentration.

24. (original) The method of claim 23, wherein said predetermined concentration is approximately 25 ppm.

25. (original) A computer readable storage medium having stored data representing instructions executable by a computer to control an internal combustion engine and an injector supplying reductant to the engine exhaust gases upstream of a catalyst coupled to the engine comprising:

instructions for periodically creating a first set of engine operating conditions; and

instructions for injecting reductant during said first set of engine operating conditions, wherein said first set of engine operating conditions are lean.

26. (original) The storage medium of claim 25, further comprising:

instructions to determine a quantity of reductant absorbed on said surfaces of the catalyst; and

instructions for performing said creation of said first set of engine operating conditions, when said quantity of reductant within said catalyst is less than a predetermined quantity of reductant.